

Work Order ID 85141

June-04-12 1:26:47 PM

85141

Page 1

Item ID: D350-636-012

Accept

N900040100

Setup

Start

NS1

Revision ID:

Item Name: Skidtube RH

Start Date: 04/06/2012 Start Qty: 1.00 *1*

Required Date: 18/06/2012 Req'd Qty: 1.00 *1*

Cust Item ID:

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12/06/04 Tooling:

Date:

Run Start

NR1

QC:

Date: SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D2750	F
D3492	C

100

0.00

100

DOCUMENT CONTROL

200 5/17/09/12

DC

0.00

Document Control

Memo

Photocopy blue file and type labels per PPP D350-636-012 CHG 006

JB

MLJ 12/07/113

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 85141

June 04/12 1:26:47 PM

85141

Page 2

Item ID: D350-636-012

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N900040100

Setup

Start

NS1

Revision ID:

Item Name: Skidtube RH

Stop

NS2

Start Date: 04/06/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 18/06/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

110

110

Skidtubes

Memo

1- Pick D2600-3 Bent

8E12/06/25

0.00

2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside
AFT end per dwg D2750

8E12/06/25

3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500",
debur.

✓

3 SAD 12-06-28

4- Locate DT8329 off of blade fitting bolt holes and drill pilot holes for blade
fitting

✓

5- Drill only two fwd step holes using DT9616. Ensure proper positioning.

8E12/06/25

6- Drill pilot holes as per Dwg D2750 sheet 4 (D2750-2 details).Drill using drill
Jig DT8150 & DT8863A for first side only DT8863B for second side (detail K)

7- Clecko DT8863B on second side of tube and drill pilot holes for detail B.
SECOND SIDE

3 SAD 12-06-28

8-Open up holes for Detail "K" to 0.375" (4 holes per side)and blade fitting
location holes to 0.500" (total of 4 holes per side) as per dwg D2750 .Open up
holes for ground handling and detail L to 0.500" (8 holes per side)

9-Drill pilot holes for wearplates as per Dwg D2750 using DT8108 open to
0.297".

10-Open up holes of Detail A to 0.297" (total of 2 holes per side)

3 BB 12/06/28

W/O:		WORK ORDER CHANGES						
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
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Page 3

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NS1**Revision ID:****Item Name:** Skidtube RH**Start Date:** 04/06/2012 **Start Qty:** 1.00 ***1*****Required Date:** 18/06/2012 **Req'd Qty:** 1.00 ***1*****Reference:****Cust Item ID:****Customer:****Approvals:** **Process Plan:****Date:****Tooling:****Date:**

Run

Start

NR1**QC:****Date:****SPC (Y/N):****Date:**

Stop

NR2**Sequence ID/
Work Center ID****Operation
Description**

11-Weld D2744 Cap as per Dwg D2750 and QSI 004. Fill grooves in bend left
from bending as per QSI 004
A/R Aluminum Rod batch: M122430

12-Grind welds flush as per Dwg D2750

Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
------------------------------	----------------	---------------	----------------------	-----------------------	-----------------------	--------------------------	------------------------

78E 12/06/25

120

QC10- Inspect visual per QSI004- ground welds

0.00

5.7/04/12***120***

QC

Quality Control

Memo

130

QC5- Inspect part completeness to step on W/O

0.00

5.7/04/12***130***

QC

Quality Control

Memo

0.00

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Page 4

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Reference:

Cust Item ID:

Customer:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2**Sequence ID/
Work Center ID**

140

140

HandFinish

Hand Finishing

**Operation
Description**

Chemical Conversion Coat per QSI005 4.1

Set Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

0.00

76 12/23

150

150

QC

Quality Control

QC7-Inspect Chemical Conversion Coat

0.00

Memo

0.00

① 500 12-02-03

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR: 11		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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June 04/12 1:26:47 PM

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Page 5

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Required Date: 18/06/2012 Req'd Qty: 1.00 *1*

Reference:

Cust Item ID:

Customer:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID
160

Operation
Description

Set Up/
Run Hours
0.00

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

160

Skidtubes

Memo

0.00

1-Open up holes of Detail L and ground handling to 0.625" (total of 8 holes per side) as per dwg D2750.

2-Open up holes of Detail K to 0.750" (total of 4 holes per side) as per dwg D2750.

3-Open float holes to .500" (4 per Side)

4-Chamfer holes of Detail K, L, ground handling and float holes per dwg D2750 (welding instructions on sheet 9)

5-Deburr and blow out all chips from inside of tube

6-Prepare tube for welding, remove alodine as required.

7-Bond web D2739 in place as per QSI 015

A/R Sikaflex-291 batch: 121409
exp. date: 04/12

8- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D2750 & QSI004 (welding instructions on sheet 9)

A/R Aluminum Rod batch: M12260

9- At section AP-AP drill out x-bolt spacer to 0.404"

10-Grind welds flush as per Dwg D2750

11-Spot face ground handling holes section (total of 4 places per side) as per

SAD 12/07/03

-DC 12/07/03

7BE 12/07/05

PF 12/07/06

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Work Order ID 85141

June-04-12 1:26:47 PM

85141

Page 6

Item ID: D350-636-012

Accept

N900040100

Setup

Start

NS1**Revision ID:****Item Name:** Skidtube RH

Stop

NS2**Start Date:** 04/06/2012 **Start Qty:** 1.00***1*****Cust Item ID:****Required Date:** 18/06/2012 **Req'd Qty:** 1.00***1*****Customer:****Reference:****Approvals:** **Process Plan:****Date:****Tooling:****Date:**

Run

Start

NR1**QC:****Date:****SPC (Y/N):****Date:**

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
	dwg D2750								
	12-Deburr holes								
170	QC10- Inspect visual per QSI004- ground welds	0.00	86 12/6/104						
170 QC Quality Control	Memo	0.00	5/10/109						
180	QC5- Inspect part completeness to step on W/O	0.00	5/10/109						
180 QC Quality Control	Memo	0.00							

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 85141

June-04-12 1:26:47 PM

85141

Page 8

Item ID: D350-636-012**Accept*****N900040100*****Setup Start*****NS1*****Revision ID:****Item Name:** Skidtube RH**Start Date:** 04/06/2012 **Start Qty:** 1.00 ***1*****Required Date:** 18/06/2012 **Req'd Qty:** 1.00 ***1*****Reference:****Cust Item ID:****Customer:****Stop*****NS2***

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	*NR1*
						Stop	*NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230		0.00							
230	HandFinishing								
HandFinish	Memo	0.00							
Hand Finishing	1-Install inserts as per dwg D2750								
	2-Inspect for Foreign Objects								
	3-Spray inside of tube with "LPS-3" batch: <u>NR1</u>								
	4-Install blade fitting D3488-042, wearshoes and ground handling hardware as per dwg D2750 SIKA FLEX 241 BATCH: <u>11121409</u> EXP DATE: <u>11105</u>								
	5-assemble o'ring to plug as per dwg D3492 and apply o'ring lube A/R 55-o'ring lube batch: <u>111180348</u>								
	6-Coat all exposed fasteners with "LPS Procyon" batch: <u>11114596</u>								

11121409

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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NOTE: Date & initial all entries

Work Order ID 85141

June-04-12 1:26:47 PM

85141

Page 9

Item ID: D350-636-012

Accept

N900040100

Setup

Start

NS1

Revision ID:

Item Name: Skidtube RH

Start Date: 04/06/2012 Start Qty: 1.00 ***1***Required Date: 18/06/2012 Req'd Qty: 1.00 ***1***

Reference:

Cust Item ID:

Customer:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
Work Center ID

240

240

QC

Quality Control

Operation
Description

QC5- Inspect part completeness to step on W/O

Memo

Set Up/
Run Hours

0.00

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

5/20/12

250

250

Packaging

Packaging

Pick Kit

0.00

Memo

0.00

5/20/12 

260

260

QC

Quality Control

QC4- 100% Inspect kits for completeness

0.00

Memo

0.00

DAS
16
8-09

5/20/12



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Work Order ID 85141

June-04-12 1:26:47 PM

85141

Page 10

Item ID: D350-636-012

Accept

N900040100

Setup

Start

NS1

Revision ID:

Item Name: Skidtube RH

Stop

NS2Start Date: 04/06/2012 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 18/06/2012 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	*NR1*
	QC:	Date:	SPC (Y/N):	Date:		Stop	*NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270 *270* Packaging	Packaging	0.00							
	Memo	0.00							
	Package as per PPP D350-636-012								

Ch 11/30

280 QC21- Final Inspection - Work Order Release 0.00

280
QC
Quality Control

Memo 0.00

*MLJ 12/07/13**MLJ 12/07/13*

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Picklist Print

June-04-12 1:26:51 PM

Page 1

Work Order ID: 85141

85141
D350-636-012

Parent Item: D350-636-012
Parent Item Name: Skidtube RH

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev:I02.09.25Rearranged procedure stepsKJ
 IPP Rev:J 06-03-29 As per Rev D EC
 IPP Rev:K 06-07-13 As per dsi9343 EC
 IPP Rev:L 07-07-28 Added SS Wearplates(Rev E) JLM Verified By:EC
 IPP Rev:M 08-04-22 update steps 4,13 DD verified by:EC
 IPP Rev:N 08-09-23 revF as per dwg DD verified by:ec IPP Rev:O
 10.06.22 revise seq110 DD verf:EC IPP Rev:P 10.10.01 as
 per IIN revH DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2600-3-BENT		Manufactured	No			110	Each	29.0000	1	1	**		

D2600-3-BFNT

Extrusion Bent

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
LG	29	
66875	7	
73253	1	
75021	1	
75022	1	
75023	1	
81330	4	
83305	1	
83442	13	

D2744

Manufactured No

110 Each 35.0000

1 **

*8/12/06/25****D2744***

Cap

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
LG002	35	
62715	1	
78900	3	
83412	31	

W/O:		WORK ORDER CHANGES					
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June-04-12 1:26:51 PM

Page 2

Work Order ID: 85141***85141***
D350-636-012**Parent Item:** D350-636-012**Parent Item Name:** Skidtube RH**Start Date:** 04/06/2012**Required Date:** 18/06/2012**Start Qty:** 1.00**Required Qty:** 1.00

D2739

Manufactured No 160 Each 13.0000 1 1 **

D2739

350 I Beam

DC 12/07/05

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
LG	13	1
72155	1	
81508	1	
83447	4	
83448	5	
83548	2	

D2743

Manufactured No 160 Each 296.0000 8 8 **

D2743

Crossbolt Spacer

BE 12/07/05

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
LG	222	
81965	55	
83262	167	8
LG001	74	
67766	4	
68251	3	
73403	64	
74445	1	
79517	2	

D3490-3

Manufactured No 160 Each 46.0000 4 4 **

D3490-3

Cross Bolt Spacer

BE 12/07/05

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
LG001	46	
83313	46	4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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June-04-12 1:26:51 PM

Page 3

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Parent Item: D350-636-012

Parent Item Name: Skidtube;RH

85141
D350-636-012

Start Date: 04/06/2012

Start Qty: 1.00

Required Date: 18/06/2012

Required Qty: 1.00

D3490-1

Manufactured No

160

Each

45.0000

4

4

**

D3490-1

Cross Bolt Spacer

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

LG	2	
81976	2	
LG001	43	
62450	2	
74875	4	
77042	3	
83269	34	

BE 62/07/05
B 85419 44

D3631-1

Manufactured No

230

Each

347.0000

8

8

**

D3631-1

Washer

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FG	332	
81874	2	
83588	330	
ST072	15	
68062	2	
75548	13	

Y8

D3791-1

Manufactured No

230

Each

17.0000

1

1

**

D3791-1

Wearplate

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP002	17	
62239	2	
83392	15	

X(

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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June-04-12 1:26:51 PM

Page 4

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Parent Item: D350-636-012

Parent Item Name: Skidtube RH

85141
D350-636-012

Start Date: 04/06/2012

Start Qty: 1.00

Required Date: 18/06/2012

Required Qty: 1.00

D3793-3

Manufactured No

230

Each

28.0000

1

1

**

M1

120210

D3793-3

Wearshoe

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP001	28	
83394	16	
83901	12	

MS21043-6

Purchased No

230

Each

618.0000

4

4

**

M1

120210

MS21043-6

NUT

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FG	20	
103693	20	
ST301	598	
117887	2	
118384	96	
120308	500	

D3794-1

Manufactured No

230

Each

26.0000

1

1

**

M1

120210

D3794-1

Gasket

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP	6	
82167	6	
FP002	20	
83395	20	

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector	
			Initial Chief Eng	Action Description Chief Eng	Sign & Date				

NOTE: Date & initial all entries

Picklist Print

June-04-12 1:26:51 PM

Page 5

Work Order ID: 85141

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

85141
D350-636-012

Start Date: 04/06/2012

Start Qty: 1.00

Required Date: 18/06/2012

Required Qty: 1.00

NAS1611-010

Purchased

No

230

Each

188.0000

8

8

**

HL

110710

NAS1611-010
O-RING

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP001	188	
110915	14	
117460	8	
118077	1	
118612	3	
119438	47	
121259	2	
121415	4	
121584	59	
<u>121723</u>	50	

D2741

Manufactured

No

250

Each

20.0000

1

1

**

831355 J B 12/07/11

D2741
Blade, 350 Skidtube

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST	-10	
ST466	30	
71856	1	
79516	19	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

June-04-12 1:26:51 PM

Page 6

Work Order ID: 85141

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

85141
D350-636-012

Start Date: 04/06/2012

Start Qty: 1.00

Required Date: 18/06/2012

Required Qty: 1.00

NAS1515H3L

Purchased

No

230

Each

146.0000

4

4

**

41 12/07/10

*NAS1515H3L *

WASHER

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FG	40	
102472	40	
ST277	106	
118686	3	
119438	1	X 41
120360	11	
121243	2	
121556	89	

NAS1611-013

Purchased

No

230

Each

361.0000

8

8

**

41 12/07/16

NAS1611-013

O-RING

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP001	361	
116582	5	
117291	2	
117887	53	
119623	36	
121584	15	
121825	200	X 8
121826	50	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

June-04-12 1:26:51 PM

Page 7

Work Order ID: 85141

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

85141
D350-636-012

Start Date: 04/06/2012

Start Qty: 1.00

Required Date: 18/06/2012

Required Qty: 1.00

AN3C6A

Purchased

No

230

Each

451.0000

4

4

**

41 120710

AN3C6A

BOLT

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP001	1	
-------	---	--

111982	1	
--------	---	--

ST351	450	
-------	-----	--

111982	2	
--------	---	--

116419	23	
--------	----	--

116549	2	
--------	---	--

116704	12	
--------	----	--

117619	10	
--------	----	--

117688	1	
--------	---	--

117872	5	
--------	---	--

118422	13	
--------	----	--

119449	21	
--------	----	--

120423	3	
--------	---	--

120693	158	
--------	-----	--

121682	200	
--------	-----	--

X4

NAS1149C0832R

Purchased

No

230

Each

257.0000

1

1

**

41 120710

WASHER

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

ST297	257	
-------	-----	--

114915	257	
--------	-----	--

X1

D3536-25

Manufactured

No

230

Each

28.0000

1

1

**

41 120710

D3536-25

Gasket

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP	28	
----	----	--

83391	12	
-------	----	--

V1

83900	16	
-------	----	--

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

June-04-12 1:26:51 PM

Page 8

Work Order ID: 85141

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

85141
D350-636-012

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3794-3

Manufactured No

230

Each

23.0000

1

1

**

M u 120410

D3794-3

Gasket

Location	Loc Qty	Loc Code
FP	21	
83396	21	X1
FP002	2	
74530	2	

AN3C5A

Purchased No

230

Each

1,302.000

34

34

**

M u 120410

AN3C5A

Bolt

Location	Loc Qty	Loc Code
FP001	7	
115835	7	
ST350	1295	
116419	28	
117343	13	
117764	7	
117872	2	
119749	23	
120423	28	
121068	12	
121255	500	X34
121444	182	
121708	500	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

June-04-12 1:26:51 PM

Page 9

Work Order ID: 85141

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

85141
D350-636-012

Start Date: 04/06/2012

Start Qty: 1.00

Required Date: 18/06/2012

Required Qty: 1.00

D3537-1

Manufactured No

230

Each

83.0000

3

3

**

D3537-1

Wearpad

JL 10710

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FG	10	B83256
79833	10	
FP002	73	
69817	5	
81360	14	
81362	19	
83254	1	
83255	3	
84091	31	

D3535-25

Manufactured No

230

Each

34.0000

1

1

**

D3535-25

Wearshoe

JL 10710

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP001	34	
62233	1	
81357	1	
82156	2	B83899
83387	17	
83899	13	

D3492-3

Manufactured No

230

Each

167.0000

8

8

**

D3492-3

Plug

JL 10710

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP-A	167	
81967	5	
83099	40	
83529	122	XG

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector	
			Initial Chief Eng	Action Description Chief Eng	Sign & Date				

NOTE: Date & initial all entries

Picklist Print

June-04-12 1:26:51 PM

Page 10

Work Order ID: 85141

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

85141
D350-636-012

AN960C10L	<u>NAS1149C0332</u>	Purchased	No	230	Each	0.0000	38	38
-----------	---------------------	-----------	----	-----	------	--------	----	----

Start Date: 04/06/2012 Required Date: 18/06/2012
Start Qty: 1.00 Required Qty: 1.00

***AN960C10I *** *✓* *^1122063 ** (x30) all in lot 10*

washer D3488-042 Manufactured No 230 Each 9.0000 1 1 *** all in lot 10*

D3488-042 *✓* Blade Fitting Assembly, RH ****

ALS4-1032-225	Purchased	No	230	Each	781.0000	38	38
---------------	-----------	----	-----	------	----------	----	----

ALS4-1032-225 *✓* Insert *** all in lot 10*

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP002	9	1383417
62003	1	<i>✓</i>
77015	1	<i> </i>
82258	7	<i> </i>

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST281	758	<i> </i>
108696	146	<i> </i>
110768	62	<i> </i>
118386	55	<i> </i>
118966	68	<i>^112246</i>
121269	427	<i>130</i>
ST282	23	<i> </i>
120410	10	<i> </i>
120451	13	<i> </i>

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

June-04-12 1:26:51 PM

Page 11

Work Order ID: 85141

85141
D350-636-012

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3492-1

Manufactured No

230

Each

257.0000

8

8

**

D3492-1

Plug

all in stock

Location	Loc Qty	Loc Code
FP002	242	
69531	8	
74444	2	
76235	4	
<u>83259</u>	228	X 8
FP-A	15	
83098	15	

D3793-1

Manufactured No

230

Each

28.0000

1

1

**

D3793-1

Wearshoe

all in stock

Location	Loc Qty	Loc Code
FP001	28	
82171	2	
<u>83393</u>	13	X 1
83903	13	

AN8C35A

Purchased No

230

Each

68.0000

1

1

**

AN8C35A

BOLT

all in stock

Location	Loc Qty	Loc Code
FP002	67	
115960	1	
<u>118286</u>	16	X 1
121275	50	
ST346	1	
114442	0	
115188	0	
115960	1	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

June-04-12 1:26:51 PM

Page 12

Work Order ID: 85141

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

85141
D350-636-012

Start Date: 04/06/2012

Start Qty: 1.00

Required Date: 18/06/2012

Required Qty: 1.00

MS21083C8

Purchased No

230 Each 81.0000

1

1

**

160710

MS21083C8

NUT

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

304	75	
121185	29	
121349	46	<i>X1</i>
FP002	1	
115884	1	
ST303	4	
115884	0	
118077	1	
119309	2	
119638	1	
ST304	1	
121524	1	

D2745

Manufactured No

230 Each 122.0000

8

**

160710

D2745

Bushing

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP	6	
79518	6	
FP001	116	
69529	1	
76142	1	
83260	114	<i>X8</i>

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector	
			Initial Chief Eng	Action Description Chief Eng	Sign & Date				

NOTE: Date & initial all entries

Picklist Print

June-04-12 1:26:51 PM

Page 13

Work Order ID: 85141

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

85141
D350-636-012

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

AN6C44A

Purchased

No

230

Each

86.0000

4

4

**

UL 120710

AN6C44A

BOLT

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FG	2	
103964	2	
ST343	84	
121013	11	
121167	13	
<u>121440</u>	50	
121689	10	

D3532-1

Manufactured

No

250

Each

7.0000

2

2

**

83319 21 12/07/11

D3532-1

Spacer

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

ST053	7	
82041	7	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

June-04-12 1:26:51 PM

Page 14

Work Order ID: 85141

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

85141
D350-636-012

Start Date: 04/06/2012

Start Qty: 1.00

Required Date: 18/06/2012

Required Qty: 1.00

MS21083C8

Purchased	No	250	Each	81.0000	2	2	✓
-----------	----	-----	------	---------	---	---	---

**

JB SO

S ***MS21083C8***
NUT

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
304	75	
121185	29	
121349	46	<u>121349</u>
FP002	1	
115884	1	
ST303	4	
115884	0	
118077	1	
119309	2	
119638	1	
ST304	1	
121524	1	

NAS1149D0863J

Purchased	No	250	Each	251.0000	2	✓
-----------	----	-----	------	----------	---	---

**

JB SO 12/07/11

S ***NAS1149D0863J***
WASHER

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST298	251	
118078	34	
119307	17	
120308	100	<u>120308</u>
121556	100	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

June-04-12 1:26:51 PM

Page 15

Work Order ID: 85141

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

85141
D350-636-012

Start Date: 04/06/2012

Start Qty: 1.00

Required Date: 18/06/2012

Required Qty: 1.00

D3493-1

Manufactured No

250

Each

127.0000

2

2

**

80 28

D3493-1
WasherLocation Loc Qty Loc CodeST050 127
77573 1
82023 26
83097 100

AN8C21A

Purchased No

250

Each

57.0000

2

2

**

83097

AN8C21A
BOLTLocation Loc Qty Loc CodeST343 57
118758 3
121167 4
121275 50

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D2750-041	350 SKIDTUBE ASSEMBLY, LH
	X			D2750-042	350 SKIDTUBE ASSEMBLY, RH
		X		D2750-043	350 SKIDTUBE ASSEMBLY, LH
			X	D2750-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D2750-1	SKIDTUBE WELDMENT, LH
	1			D2750-2	SKIDTUBE WELDMENT, RH
		1		D2750-3	SKIDTUBE WELDMENT, LH
1			1	D2750-4	SKIDTUBE WELDMENT, RH
	1	1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
1	1	1	1	D3535-25	WEARSHOE
1	1	1	1	D3536-25	GASKET
3	3	3	3	D3537-1	WEARPAD
8	8	8	8	D3631-1	WASHER
1	1	1	1	D3791-1	WEARPLATE
1	1	1	1	D3793-1	WEARSHOE
1	1	1	1	D3793-3	WEARSHOE
1	1	1	1	D3794-1	GASKET
1	1	1	1	D3794-3	GASKET
38	38	38	38	ALS4-1032-225	INSERT (OR ALS7-1032-225, AKS4-1032-225, AELS-1032-225)
34	34	34	34	AN3C5A	BOLT
4	4	4	4	AN3C6A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
38	38	38	38	AN960C10L	WASHER
1	1	1	1	AN960C816L	WASHER
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

GENERAL NOTES:

- 1) MATERIAL: MAKE D2750-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- 2) FINISH:
ACID ETCH, ALONDE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: D2750-041/-042/-043/-044 = 26.5 LBS
- 8) WELD PER DART QSI 004
- 9) INSTALL ALS4-1032-225 INSERTS AFTER FINISH AS INDICATED. DRILL 'F' SIZE HOLES (.0297) FOR WEARSHOE INSERTS
- 10) FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
MINIMUM YIELD TENSILE STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- 11) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS.
COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
POWDER COATING WITH MEK DEGREASER.
- 12) SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL 
- 13) SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

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SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 85141 MLJ 12/06/04

RELEASED
6/27/02 MJP

F	INCORPORATE DS1 9413; QTY (3) D3537-1 WAS QTY (5) (ZN C8-1); D3791-1/3 REPLACES D3535-13/35 (ZN C8-1); D3791-1/3 REPLACES D3536-13/35 (ZN B8-1); ADD D3791-1 (ZN C8-1); WEARSHOE HOLES UNDER FWD/AF SADDLE REMOVED (8 PL). WEARSHOE HARDWARE QTY UPDATED (ZN B8-1); D3488-041/-042 HARDWARE UPDATED (ZN C1-8, 9, 10, 11); ADD NOTE 12 AND 13 (ZN A6-1); REASON REF: NCK 08-043	PH	08.07.16
E	CHANGE TO STAINLESS STEEL WEARPLATES; ADD RUBBER GASKETS, CHANGE INSERTS, ADD D3631-1; REMOVE QTY (38) NAS1515H3L; REMOVE QTY (10) NAS1515H8L; REMOVE D2741, QTY (2) AN960C816; REMOVE QTY (2) MS21083C8	CB	07.05.17
D	ADD HOLES AND SI'ACERS FOR APICAL FLOATS; INCORPORATE DEO 9133/9157	PH	06.01.05
C	ADD D2750-3/D2750-4; INCORPORATE D2738 AND D2740	CP	98.11.18
B	CHANGE MS24694-S293 TO AN8-16A	CP	98.09.01
A	NEW ISSUE	DS	98.04.16
REV.	DESCRIPTION	BY	DATE
DESIGN		DART AEROSPACE USA, INC.	
DRAWN		PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2750	SHEET 1 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

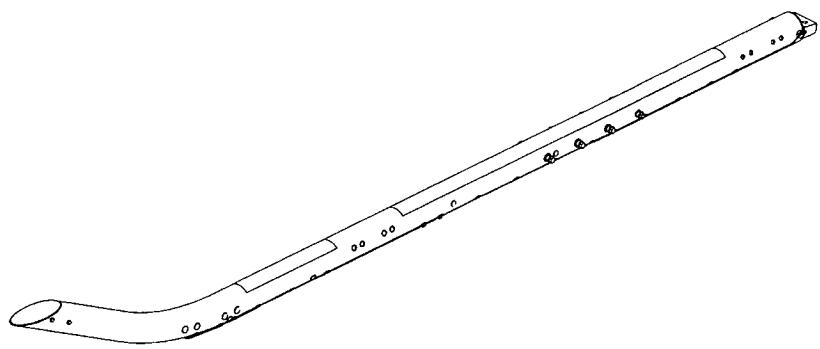
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

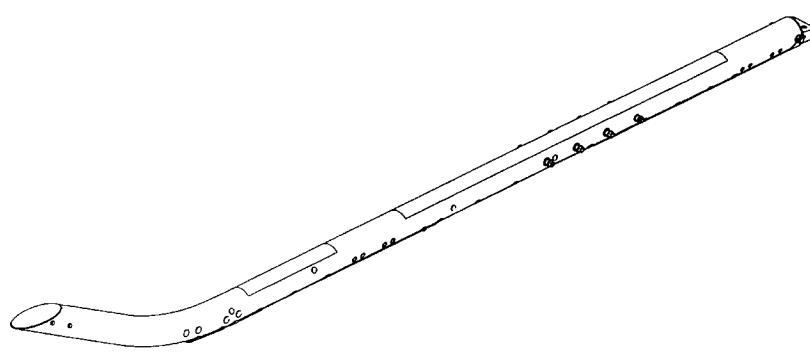
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

05141



D2750-041 350 SKIDTUBE ASSEMBLY, LH



D2750-042 350 SKIDTUBE ASSEMBLY, RH

RELEASED
08-07-16

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MFG. APPR.	<i>pw</i>	D2750	SHEET 2 OF 11
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DE APPR.	<i>pw</i>	350 SKIDTUBE ASSEMBLY	NTS
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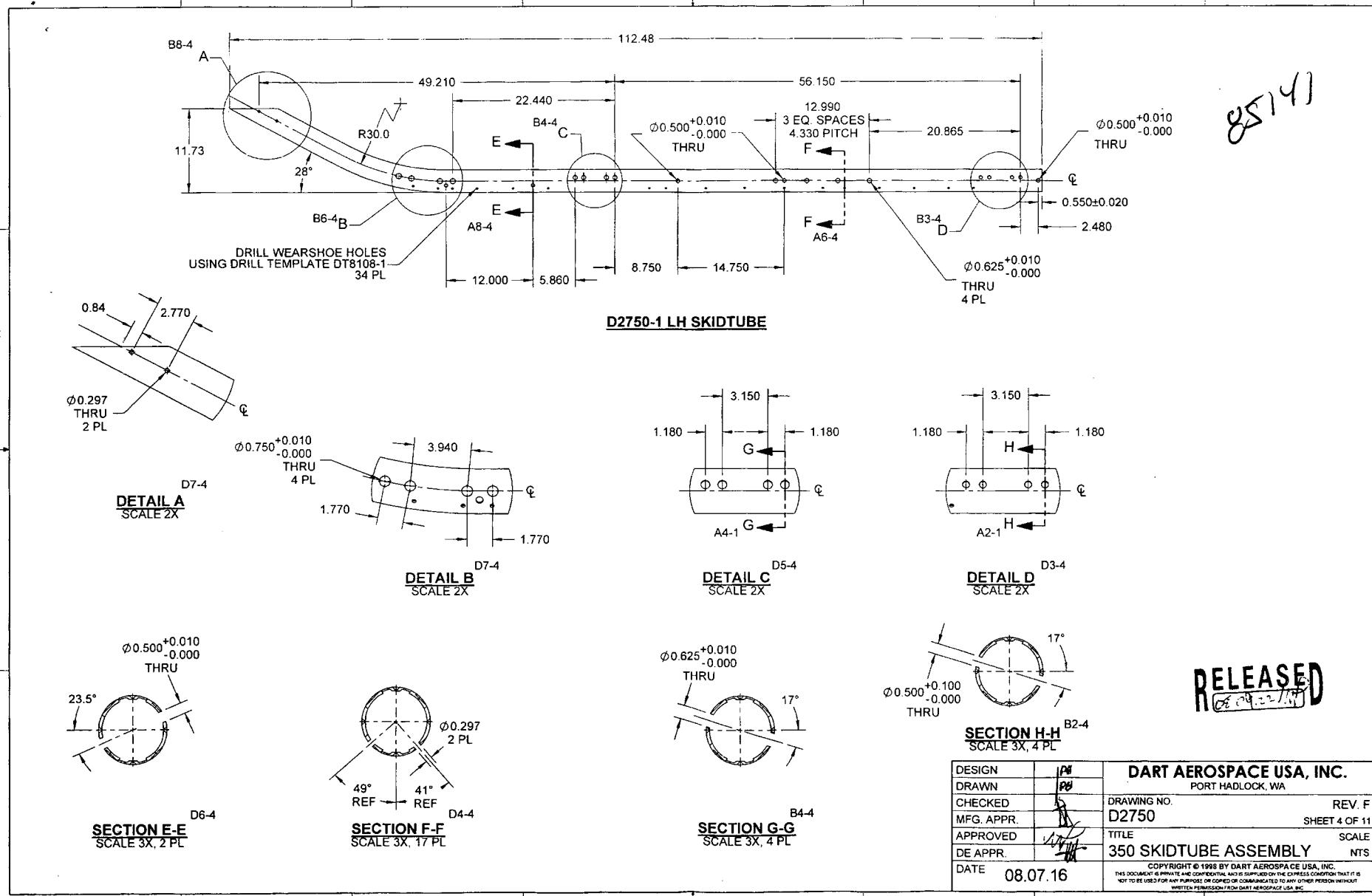
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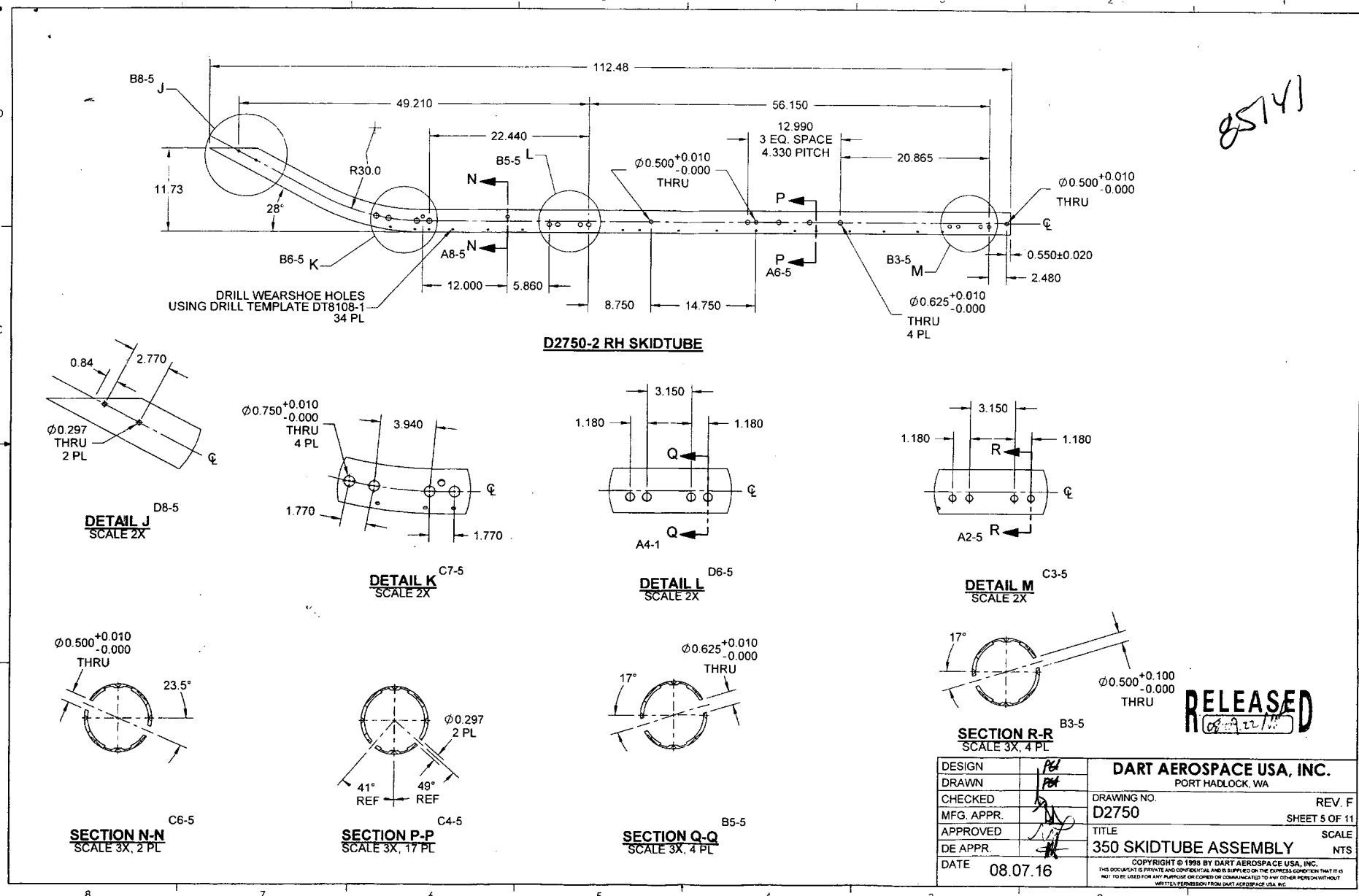
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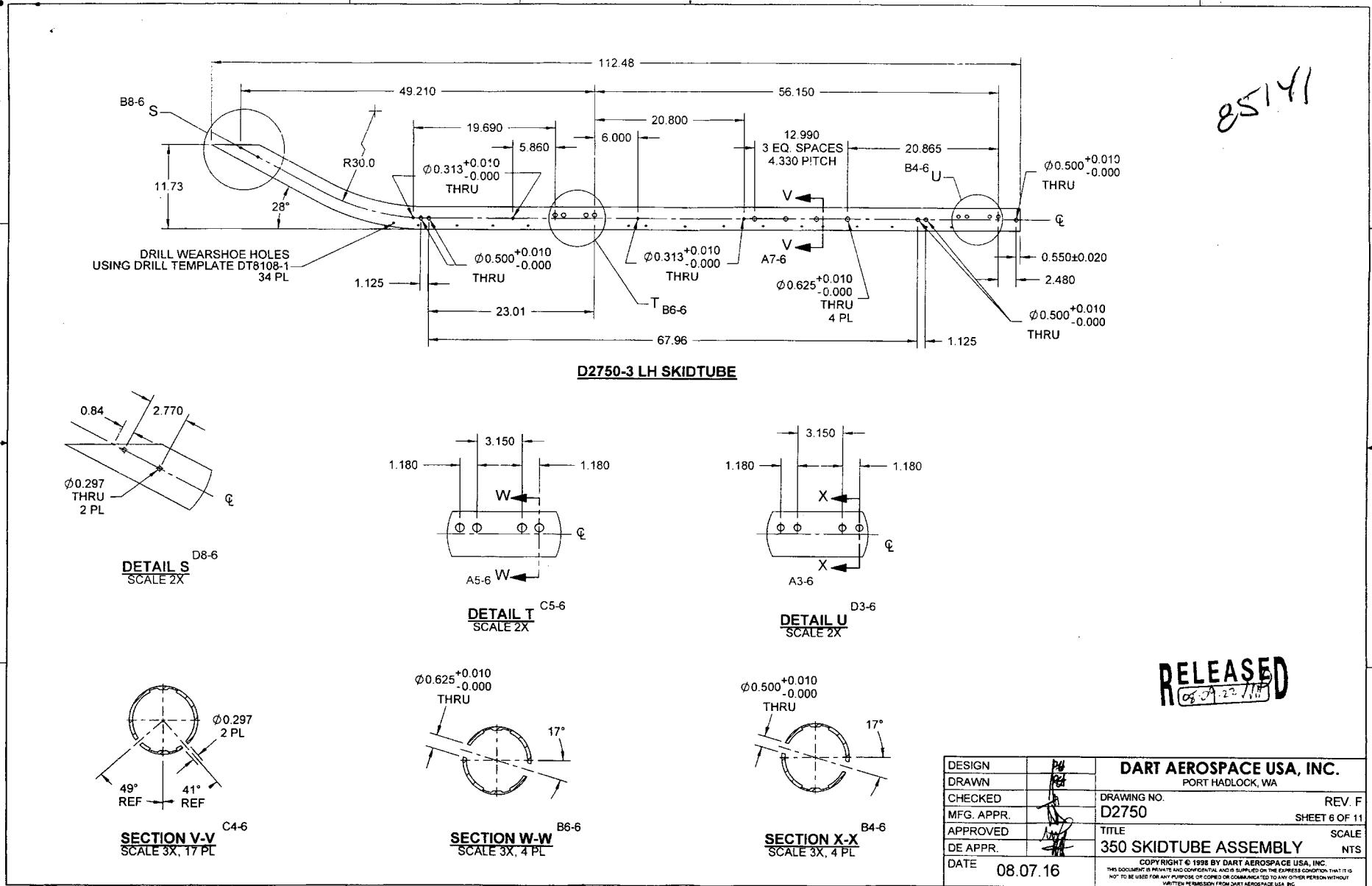
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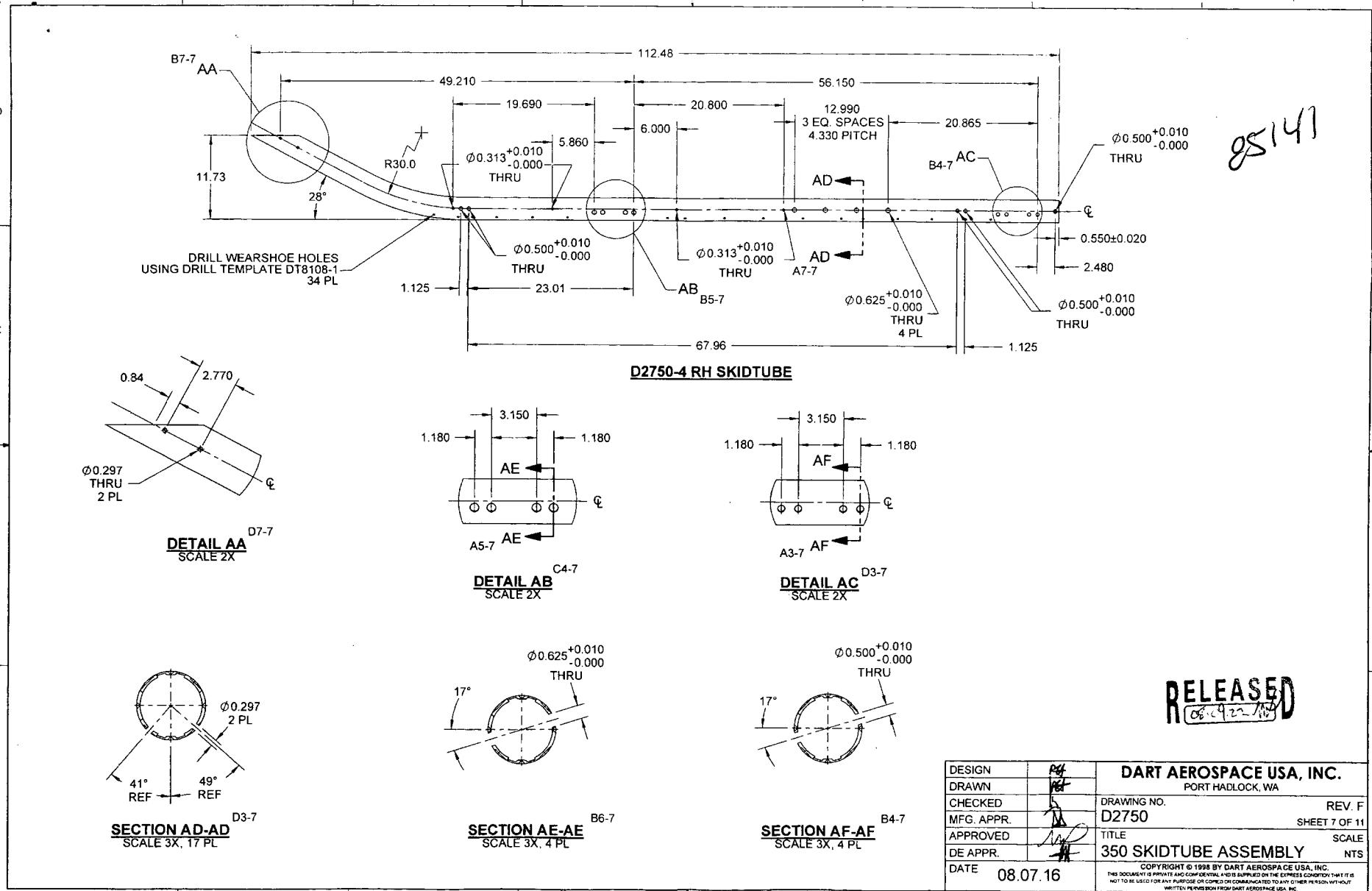
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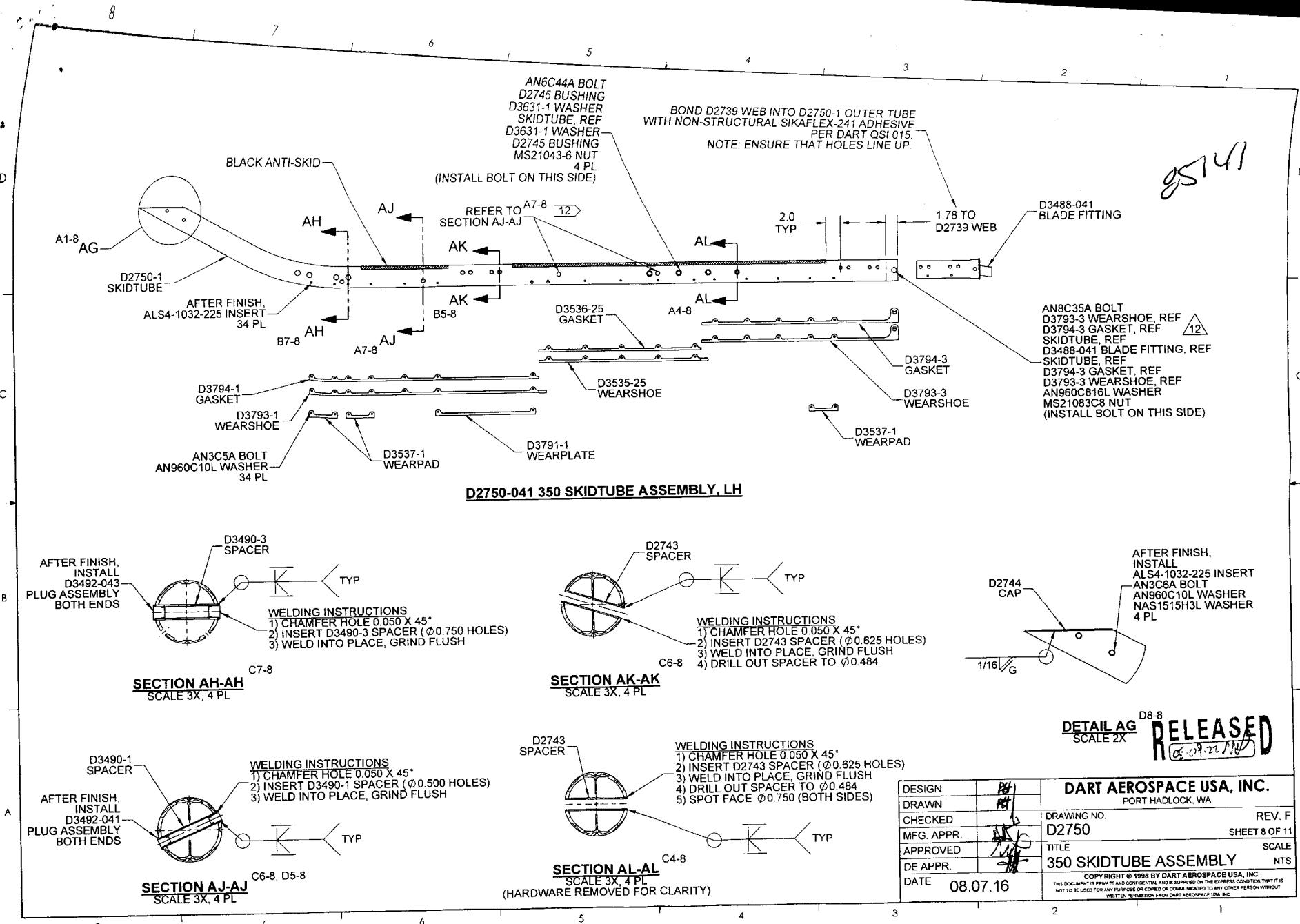
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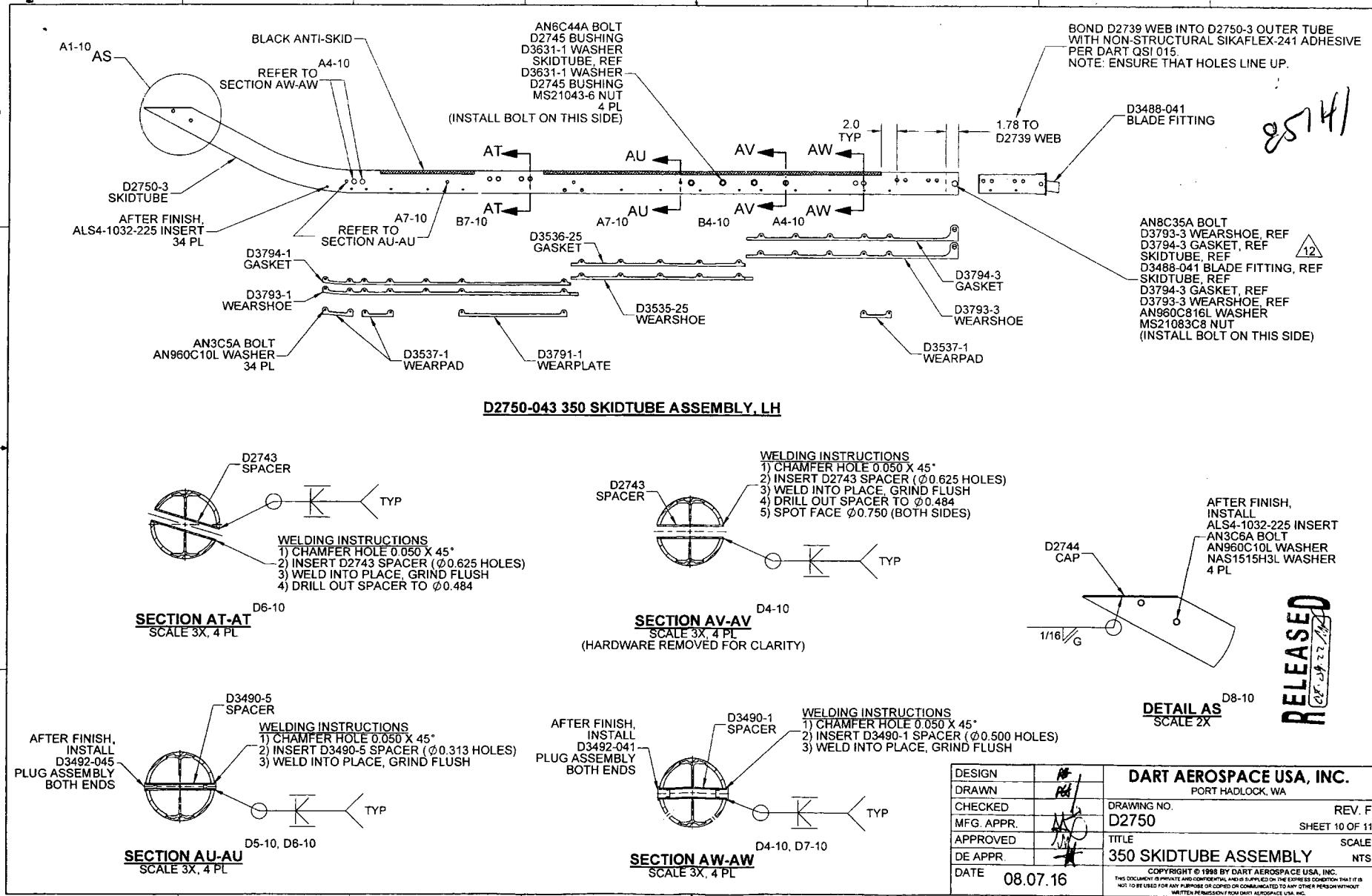
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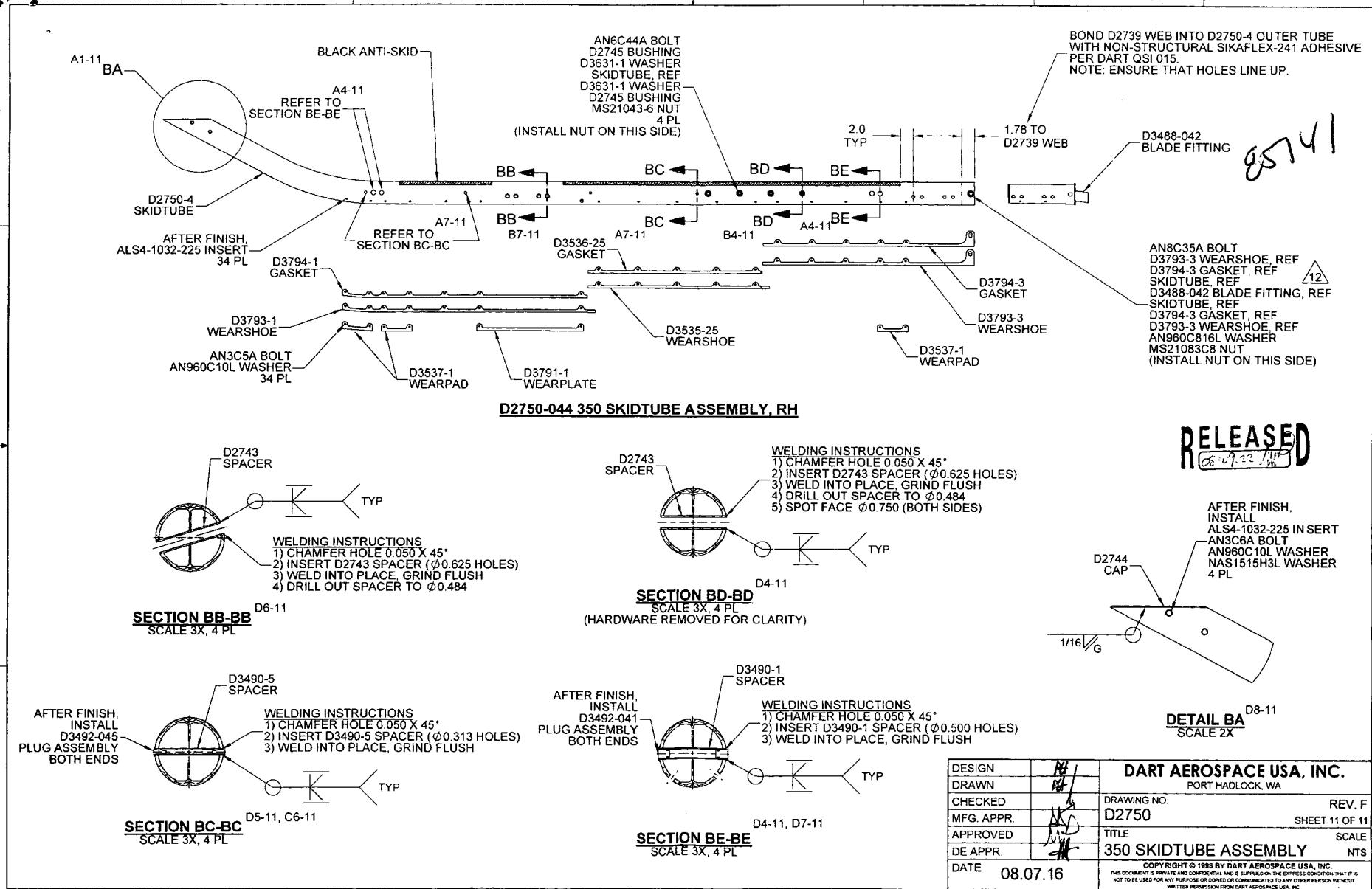
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NO. 294

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 83800
Part number: 1350-636-012
Description: Skidtube
Welding Process: Tig[✓] Mig[]
Base material: Alum
Current: AC[✓] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[✓] fail[]
Penetration: pass[✓] fail[]

UNACCEPTABLE

Cracks: pass[✓] fail[]
Undercut: pass[✓] fail[]
Pin holes: pass[✓] fail[]
Overlap (cold lap) pass[✓] fail[]
Porosity (surface): pass[✓] fail[]
Coloration: pass[✓] fail[]

Qualifier David Lewis Date of Test Coupon 2.05.09

Welder Barclay Elliott Date of Test Coupon 12.05.09

The above named individual is qualified in accordance with AWS D17.1.2001 to weld